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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/715,826	11/19/2003	J. Donald Hill	018880.0149	3645
24735	7590	05/04/2007		
BAKER BOTTS LLP C/O INTELLECTUAL PROPERTY DEPARTMENT THE WARNER, SUITE 1300 1299 PENNSYLVANIA AVE, NW WASHINGTON, DC 20004-2400			EXAMINER KOTINI, PAVITRA	
			ART UNIT 3731	PAPER NUMBER
			NOTIFICATION DATE 05/04/2007	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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## Office Action Summary

Application No.

10/715,826

Applicant(s)

HILL ET AL.

Examiner

Pavitra Kotini

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-66 is/are pending in the application.
- 4a) Of the above claim(s) 13-22 and 34-66 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12, 23-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

This Office Action is in response to Applicant's amendment received on 2/9/07.

### ***Claim Rejections - 35 USC § 102***

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

**Claims 1, 2, 3, 5-8, 12** are rejected under 35 U.S.C. 102(e) as being anticipated by Carson et al. (US-2005/0192604).

Regarding **claim 1**, Carson discloses a coupler comprising: a saddle (14, fig.1A); a channel (thickened, widened portion of conduit 18, fig. 3C), wherein said channel comprises a first end having a substantially elliptical cross-section connected to said saddle (at connection of channel to vessel wall W, fig. 3D; I, fig 5A) and a second end having a substantially circular cross-section (at distal end of the thickened, widened channel portion of conduit 18, fig. 3C); a tissue clamp positioned around said channel (16, fig. 1A); and a flange formed adjacent to said second end of said channel (34, fig. 1A, 3C).

Regarding **claims 2, 3, & 12**, Carson discloses tissue clamp comprises a shape-memory alloy, and that shape memory alloy comprises a nickel titanium, also known as nitinol (para.0079).

Regarding **claim 5**, Carson discloses the tissue clamp comprising a plurality of dimpled holes formed there through (fig. 9A, 9B).

Regarding **claim 6**, Carson discloses the cross-sectional area of said channel's inner surface to be substantially constant as said channel transitions from said first end to said second end (lumen of channel 18, fig. 3C).

Regarding **claim 7**, Carson discloses the cross-sectional area of said channel increases or decreases as said channel transitions from said first end to said second end (exterior of channel 18, fig. 3C).

Regarding **claim 8**, Carson discloses a mating surface formed adjacent to said flange (in between flanges 34, fig. 3D).

### ***Claim Rejections - 35 USC § 103***

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

**Claims 4 and 9** are rejected under 35 U.S.C. 103(a) as being unpatentable over Carson et al (US-2005/0192604) in view of Berreklouw (WO 00/24339).

Regarding **claim 4**, Carson discloses a tissue clamp, but does not expressly disclose teeth along the periphery of the clamp. Berreklouw teaches a tissue clamp (45, fig. 8) with teeth (26, fig. 8) along the perimeter of the tissue clamp. This arrangement has the apparent advantage of ensuring better connection between the tissue clamp

and the vessel. Therefore, it would have been obvious to a person of ordinary skill in the art to modify the tissue clamp of Carson to include teeth, as taught by Berrelouw to obtain the same advantage.

Regarding **claim 9**, Carson discloses a tissue clamp, but fails to expressly teach a pair of legs on the tissue clamp. However, Berreklouw teaches another embodiment of a tissue clamp (115, fig. 5) with a pair of legs (114, fig. 5) which can be extended and positioned accordingly to another part of the anastomosis device (K, fig. 4) to create adequate clamping force. Therefore, it would have been obvious to a person of ordinary skill in the art to modify the tissue clamp of Carson to include legs as taught by Berreklouw in order to have the tissue clamped adequately to the saddle.

**Claim 10** is rejected under 35 U.S.C. 103(a) as being unpatentable over Carson et al. (US-2005/0192604) in view of Kavteladze et al (6814750). Carson discloses the claimed invention except that the material is made from a material having an austenitic temperature below 10 degrees Celsius. However, Kavteladze discloses that the transformation temperature of austenitic state nickel titanium alloy is below the normal temperature of a human body (col.10, lines 43-48), which would allow the material to exhibit relatively high tensile strength and be stable. Below ten degrees includes the range below body temperature, hence, since the tissue clamp disclosed by Carson is made from nickel titanium, the tissue clamp would also exhibit the property of having an austenitic transition temperature below 10 degrees Celsius. Therefore, it would be obvious to a person of ordinary skill in the art, at the time of the invention, that the

nickel titanium tissue clamp disclosed by Carson can be modified as taught by Kavteladze to exhibit the same advantage stated above.

**Claim 11** is rejected under 35 U.S.C. 103(a) as being unpatentable over Carson et al. (US-2005/0192604) in view of Boylan et al (US 6554848). Carson discloses the invention substantially as claimed above. Carson does not disclose that the material has an austenitic temperature equal to or greater than body temperature. Boylan, however, discloses making a device implantable within the body with a nickel titanium alloy having an austenitic phase above body temperature, or 37 degrees Celsius (claim 14), which would allow the material to exhibit relatively high tensile strength and be stable. Therefore, it would have been obvious to a person of ordinary skill in the art, at the time of the invention, that the nickel titanium tissue clamp disclosed by Carson is modified as taught by Boylan to obtain the same advantage.

**Claims 23-33** are rejected under 35 U.S.C. 103(a) as being unpatentable over Akin et al. (US-2002/0161383).

Regarding **claim 23**, Akin discloses a coupler having a saddle (60, fig.9); a channel (84, fig. 10), a tissue clamp (56, fig. 9), and a flange (rim of channel 84, fig. 10), a second coupler comprising a second saddle (62, fig. 9), a second channel (80, fig. 10), a second tissue clamp (58, fig. 9), and a second flange (rim of channel 80, fig. 10).

Akin further discloses in another embodiment, a clamping ring (122, fig. 11B) for bringing together the flanges of two separate couplers. Therefore, it would have been obvious to a person of ordinary skill in the art, at the time of the invention, to modify the

conduit coupling device disclosed in fig. 9 and 10 to include a clamping ring as disclosed in figure 11B. Such a modification would gain the advantage of further securing the two couplers (para.0097).

Regarding **claim 24**, said first channel and second channel have substantially constant cross-sectional area (each channel 80 and 84 have constant area throughout).

Regarding **claim 25**, said first channel and second channel have varying cross-sectional areas (channel 80 have a different cross-sectional area relative to channel 84 since channel 84 fits inside channel 84).

Regarding **claim 26**, a first mating surface formed adjacent to said first flange and a second mating surface formed adjacent to said second flange (fig. 9).

Regarding **claim 27**, said first tissue clamp and said second tissue clamp comprise a shape-memory alloy (para.0092).

Regarding **claim 29**, it is old and well know that said first tissue clamp and said second tissue clamp comprise a plurality of teeth positioned along a periphery of said first tissue clamp and said second tissue clamp because teeth, ridges, or grooves are established means of reinforcing connection between two materials. See for example, US patent # 4917087.

Regarding **claim 30**, said first channel (84) comprises a first end of substantially elliptical cross-section (78, fig. 9) connected to said first saddle (60) and a second end of substantially circular cross-section adjacent to said first flange (86, fig. 10).

Regarding **claim 31**, wherein said second channel (80) comprises a first end of substantially elliptical cross-section (78, fig. 9) connected to said second saddle (62)

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and a second end of substantially circular cross-section adjacent to said second flange (86, fig. 10).

Regarding **claim 32**, Akin discloses that the first coupler or first saddle may be positioned at varying positions relative to said second coupler or second saddle (fig. 9-11B, which shown a side-to-side coupling device, or fig. 12A-B, 13, 14, and 15A-B, which shown an end-to-side coupling device). The first set of figures compared to the second set of figures shows different possible locations for the first coupler and saddle relative to the second coupler and saddle.

Regarding **claim 33**, a first channel comprises a first end of substantially circular cross-section connected to said first saddle (104) and a second end of substantially circular cross-section adjacent to said first flange (fig. 11A, 11B).

**Claim 28** is rejected under 35 U.S.C. 103(a) as being unpatentable over Akin et al. (US-2002/0161383) in view of Carson et al. (US-2005/0192604).

Akin discloses a first tissue clamp (56) and said second tissue clamp (58), but fails to disclose plurality of dimpled holes formed there through.

However, Carson teaches dimpled holes the tissue clamp comprising a plurality of dimpled holes formed there through (fig. 9A, 9B). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the tissue clamp disclosed by Akin to include dimple holes as taught by Carson. Such a modification would gain the advantage of additional securing means to the tissue.

### ***Response to Arguments***



With regard to claims 1-12, Applicant's arguments filed 2/9/07 have been fully considered but they are not persuasive. The channel disclosed by Carson, specifically the thickened, widened portion of the conduit as indicated above in the art rejection is the channel and substantially at this second end, the flange is also present.

Applicant's arguments, see page 19-20, filed 2/9/07, with respect to claims 23-33, have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Akin et al. (US-2002/0161383). Akin discloses two separate couplers that are connected together with a clamping ring.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pavitra Kotini whose telephone number is 571-272-0624. The examiner can normally be reached on M-F 8:30am to 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anhtuan Nguyen can be reached on 571-272-4963. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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**ANH TUAN T. NGUYEN**  
**SUPERVISORY PATENT EXAMINER**   
